

# How to Study

## Higher Design & Manufacture



The question paper for this subject is out of 80 marks. It assesses knowledge and understanding from the following areas of design and manufacturing.

1. Design	30-50 marks
2. Materials & Manufacture	26-42 marks
3. Impact of design and manufacturing technologies on society, the environment, and the world of work.	4-8 marks

Total Marks: 80 marks

Despite their separated headings, the topics are often intermingled and an explanation for one area will often require knowledge from another. For example, design decisions may have been made due to material constraints; or a manufacture process will have been determined by the shape of the product which has been designed. The choice of material may have been influenced by environmental considerations. It is imperative that you have good knowledge in both areas. It is therefore important that you study all aspects.

- Various research, and products evaluation techniques.
- A range of idea-generation techniques and their effectiveness.
- The different types of specifications and their use within the design process.
- A range of creative design skills when refining and resolving product design tasks that cover key design challenges.
- Selecting and using graphic techniques to visually represent design solutions, justifying the choice of techniques.
- Selection and purpose of using, and evaluating a range of simple modelling and manufacturing techniques to represent design ideas in three dimensions.
- The planning stages for the manufacture of a commercial product.
- Identifying a range of tools, equipment, software and materials for designing, making and testing models and prototypes.
- The impact of a range of design and manufacturing technologies on our environment and society.
- A range of factors that influence the design and manufacture of products.
- A broad range of industrial and commercial manufacturing processes and the properties and uses of appropriate materials.

When learning these topics in school, you will undertake a variety of tasks all aimed at giving you a better understanding. This may have taken the form of group work exercises and discussions, individual questions and some small practical tasks.

When it comes to the exam, you have to give written responses to the questions where you will have to apply your knowledge, understanding and problem solving skills to the context of the question. Use the hints below to help you with this ...

### COMMAND WORDS

Study the question carefully, the command word will tell you what to include in your answer. These are the most common command words used in Higher Design & manufacture.

**DESCRIBE:** You must provide a statement which gives the characteristics or features required. This should be a structured statement and not just an outline or list. The number of marks available indicates the number of factual or appropriate points required.

**EXPLAIN:** You must ensure that your response relates cause and effect, this may involve explaining the relationship between factors ... essentially what this means is, you must explain why something has been done.

**COMPARE:** You need to demonstrate your understanding of the similarities and/or differences between things, methods and choices.

*You always need to make your responses relate to the context of the question, don't just give the definition of something!*

### IDENTIFY THE ISSUES

#### NOTES

- D&M is a practical subject
- NEVER just read your notes.
- You MUST practice questions.

#### Past Papers & Exam Style Questions

- Make a LIST of your mistakes
- Do not just read, but WRITE out the correct statement, identifying what was wrong or missing from your original answers.
- If you do not understand a question or topic, ASK FOR HELP!
- Repeat the questions from your mistake list a few days later to see if you have progressed.

### BE STRATEGIC & GET SUPPORT

#### BE STRATEGIC

- Sometimes attempt a whole past paper, sometimes just focus on one topic or question type.
- E.g. Pick your least favourite topic to have a day at testing yourself and focus on.

#### HOMEWORK

- Make sure you complete it (on time).
- Checked marked work for mistakes and read any feedback given. DO NOT IGNORE the questions you get wrong.

#### GET SUPPORT

- Attend supported study.
- Ask your teacher for help.
- Youtube videos can help, particularly with manufacturing processes.

### HELP YOURSELF REMEMBER

#### TEST YOURSELF

- Start by trying questions with notes.
- Try past papers without your notes to see what you REALLY know.
- Redo your incorrect questions a few days later to see if you have improved.

#### SPACE YOUR PRACTICE

- An hour of study done often throughout the year is much better than cramming at the end. You will remember more this way.

- Various research, and products evaluation techniques.
- A range of idea-generation techniques and their effectiveness.
- The different types of specifications and their use within the design process.
- A range of creative design skills when refining and resolving product design tasks that cover key design challenges.
- Selecting and using graphic techniques to visually represent design solutions, justifying the choice of techniques.
- Selection and purpose of using, and evaluating a range of simple modelling and manufacturing techniques to represent design ideas in three dimensions.
- The planning stages for the manufacture of a commercial product.
- Identifying a range of tools, equipment, software and materials for designing, making and testing models and prototypes.
- The impact of a range of design and manufacturing technologies on our environment and society.
- A range of factors that influence the design and manufacture of products.
- A broad range of industrial and commercial manufacturing processes and the properties and uses of appropriate materials.